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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Inventor Applicant: DENNIS D. SHUMARD
Serial No.: 09/993,711
Filed: November 5, 2001
For: CONCENTRIC PIPE JOINT CONSTRAINT
Examiner: Giovanna M. Collins
Group Art Unit: 3679

MS FEE AMENDMENT
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

CERTIFICATE OF MAILING BY FIRST CLASS MAIL

The undersigned hereby certifies that the following documents:

1. Amendment and Response;
2. Request for Extension of Time;
3. Check in the amount of \$181.00;
4. Transmittal letter (in duplicate); and
5. A postcard receipt;

relating to the above application, were deposited as "First Class Mail", with sufficient postage thereon, with the United States Postal Service, addressed to MS FEE AMENDMENT, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on 5/12/03.

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May 7, 2003

MS FEE AMENDMENT
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Re: Serial No. 09/993,711
Atty. Docket: 74240.0102

Sir:

Enclosed for filing are the following documents:

1. Amendment and Response;
2. Request for Extension of Time;
3. Check in the amount of \$181.00;
4. Certificate of Mailing by First Class Mail; and
5. Postcard receipt.

The Commissioner is hereby authorized to charge any underpayment of fees in connection with this application, or credit any overpayment, to Deposit Account No. 50-2225.

Very truly yours,


George "Russ" Schultz

GRS:dt
Enclosure

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Serial No.: 09/993,711

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For: CONCENTRIC PIPE JOINT CONSTRAINT

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10/Amend A
L.B.
5-21-02

MS FEE AMENDMENT
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Void date: 05/19/2003 FFANAEIA
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RESPONSE AND AMENDMENT

Please amend claims 1, 2, 5, 6, 7, 8, 9, 10 and 11 as follows:

1. (Currently amended) A concentric pipe joint constraint, said restraint resisting axial movement of a spigot pipe relative to a socket pipe within which a portion of said spigot pipe has been inserted, said spigot pipe and said socket pipe defining an annulus, said restraint comprising:
 - a spigot wedge ring comprising one or more spigot gripping protrusions;
 - socket wedge ring comprising one or more socket gripping protrusions; and
 - a positioning member separating [wedge housing positioning] said spigot wedge ring relative to said socket wedge ring with which it is in effective contact in said annulus such that said spigot gripping protrusions grip said spigot pipe and said socket gripping protrusions grip said socket pipe.

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2. (Currently amended) The restraint of claim 1 wherein:
said spigot wedge ring further comprises a frusto-conical surface; and
said socket wedge ring further comprises an opposed frusto-conical surface in
effective contact with said positioning member [frusto-conical surface].
3. (Original) The restraint of claim 2 wherein the gripping protrusions are biased
to prevent axial separation of the pipes.
4. (Original) The restraint of claim 3 wherein the frusto-conical surfaces are
biased to prevent axial separation of the pipes.
5. (Amended) A concentric pipe joint constraint, said restraint resisting axial
movement of a spigot pipe relative to a socket pipe within which a portion of said spigot pipe has
been inserted, said spigot pipe and said socket pipe defining an annulus, said restraint
comprising:
a spigot wedge ring comprising one or more spigot gripping protrusions;
socket wedge ring comprising one or more socket gripping protrusions;
a wedge housing positioning said spigot wedge ring relative to said socket wedge
ring with which it is in effective contact in said annulus such that said spigot gripping protrusions
grip said spigot pipe and said socket gripping protrusions grip said socket pipe;
wherein said spigot wedge ring further comprises a frusto-conical surface;
said socket wedge ring further comprises an opposed frusto-conical surface in
effective contact with said frusto-conical surface;

the gripping protrusions are biased to prevent axial separation of the pipes;
the frusto-conical surfaces are biased to prevent axial separation of the pipes; and
[the restraint of claim 4 further comprising] an actuator driving said gripping protrusions into said pipes by imparting axial movement of said wedge rings relative to one another, said axial movement imparting sliding axio-radial movement of said frusto-conical surfaces relative to one another.

6. (Currently amended) A concentric pipe joint constraint, said restraint resisting axial movement of a spigot pipe relative to a socket pipe within which a portion of said spigot pipe has been inserted, said spigot pipe and said socket pipe defining an annulus, said restraint comprising:

a spigot wedge ring comprising one or more spigot gripping protrusions;
socket wedge ring comprising one or more socket gripping protrusions;
a wedge housing positioning said spigot wedge ring relative to said socket wedge ring with which it is in effective contact in said annulus such that said spigot gripping protrusions grip said spigot pipe and said socket gripping protrusions grip said socket pipe;

wherein said spigot wedge ring further comprises a frusto-conical surface;
said socket wedge ring further comprises an opposed frusto-conical surface in effective contact with said frusto-conical surface; and

[The restraint of claim 2] wherein the gripping protrusions are biased to prevent axial compression of the pipes.

7. (Currently amended) A concentric pipe joint constraint, said restraint resisting axial movement of a spigot pipe relative to a socket pipe within which a portion of said spigot pipe has been inserted, said spigot pipe and said socket pipe defining an annulus, said restraint comprising:

a spigot wedge ring comprising one or more spigot gripping protrusions;

socket wedge ring comprising one or more socket gripping protrusions;

a wedge housing positioning said spigot wedge ring relative to said socket wedge ring with which it is in effective contact in said annulus such that said spigot gripping protrusions grip said spigot pipe and said socket gripping protrusions grip said socket pipe;

wherein said spigot wedge ring further comprises a frusto-conical surface;

said socket wedge ring further comprises an opposed frusto-conical surface in effective contact with said frusto-conical surface;

the gripping protrusions are biased to prevent axial compression of the pipes; and

[The restraint of claim 6] wherein the frusto-conical surfaces are biased to prevent axial compression of the pipes.

8. (Currently amended) A concentric pipe joint constraint, said restraint resisting axial movement of a spigot pipe relative to a socket pipe within which a portion of said spigot pipe has been inserted, said spigot pipe and said socket pipe defining an annulus, said restraint comprising:

a spigot wedge ring comprising one or more spigot gripping protrusions;

socket wedge ring comprising one or more socket gripping protrusions;

a wedge housing positioning said spigot wedge ring relative to said socket wedge ring with which it is in effective contact in said annulus such that said spigot gripping protrusions grip said spigot pipe and said socket gripping protrusions grip said socket pipe;

wherein said spigot wedge ring further comprises a frusto-conical surface;

said socket wedge ring further comprises an opposed frusto-conical surface in effective contact with said frusto-conical surface;

the gripping protrusions are biased to prevent axial compression of the pipes;

the frusto-conical surfaces are biased to prevent axial compression of the pipes;

and

[The restraint of claim 7 further comprising] an actuator driving said gripping protrusions into said pipes by imparting axial movement of said wedge rings relative to one another, said axial movement imparting sliding axio-radial movement of said frusto-conical surfaces relative to one another.

9. (Currently amended) The restraint of claim 6 [2] wherein the frusto-conical surfaces are biased to prevent axial separation of the pipes.

10. (Currently amended) A concentric pipe joint constraint, said restraint resisting axial movement of a spigot pipe relative to a socket pipe within which a portion of said spigot pipe has been inserted, said spigot pipe and said socket pipe defining an annulus, said restraint comprising:

a spigot wedge ring comprising one or more spigot gripping protrusions;

socket wedge ring comprising one or more socket gripping protrusions;

a wedge housing positioning said spigot wedge ring relative to said socket wedge ring with which it is in effective contact in said annulus such that said spigot gripping protrusions grip said spigot pipe and said socket gripping protrusions grip said socket pipe; and
said spigot wedge ring further comprises a frusto-conical surface;
said socket wedge ring further comprises an opposed frusto-conical surface in effective contact with said frusto-conical surface;

[The restraint of claim 2] wherein the frusto-conical surfaces are biased to prevent axial separation of the pipes; and

an actuator driving said gripping protrusions into said pipes by imparting axial movement of said wedge rings relative to one another, said axial movement imparting sliding axio-radial movement of said frusto-conical surfaces relative to one another.

11. (Currently amended) A concentric pipe joint constraint, said restraint resisting axial movement of a spigot pipe relative to a socket pipe within which a portion of said spigot pipe has been inserted, said spigot pipe and said socket pipe defining an annulus, said restraint comprising:

a spigot wedge ring comprising one or more spigot gripping protrusions;
socket wedge ring comprising one or more socket gripping protrusions;
a wedge housing positioning said spigot wedge ring relative to said socket wedge ring with which it is in effective contact in said annulus such that said spigot gripping protrusions grip said spigot pipe and said socket gripping protrusions grip said socket pipe;
said spigot wedge ring further comprises a frusto-conical surface;

said socket wedge ring further comprises an opposed frusto-conical surface in effective contact with said frusto-conical surface; and

[The restraint of claim 2] wherein the frusto-conical surfaces are biased to prevent axial compression of the pipes.

12. (Original) The restraint of claim 11 further comprising an actuator driving said gripping protrusions into said pipes by imparting axial movement of said wedge rings relative to one another, said axial movement imparting sliding axio-radial movement of said frusto-conical surfaces relative to one another.

13. (Original) The restraint of claim 2 wherein at least one wedge ring further comprises circumferential end portions.